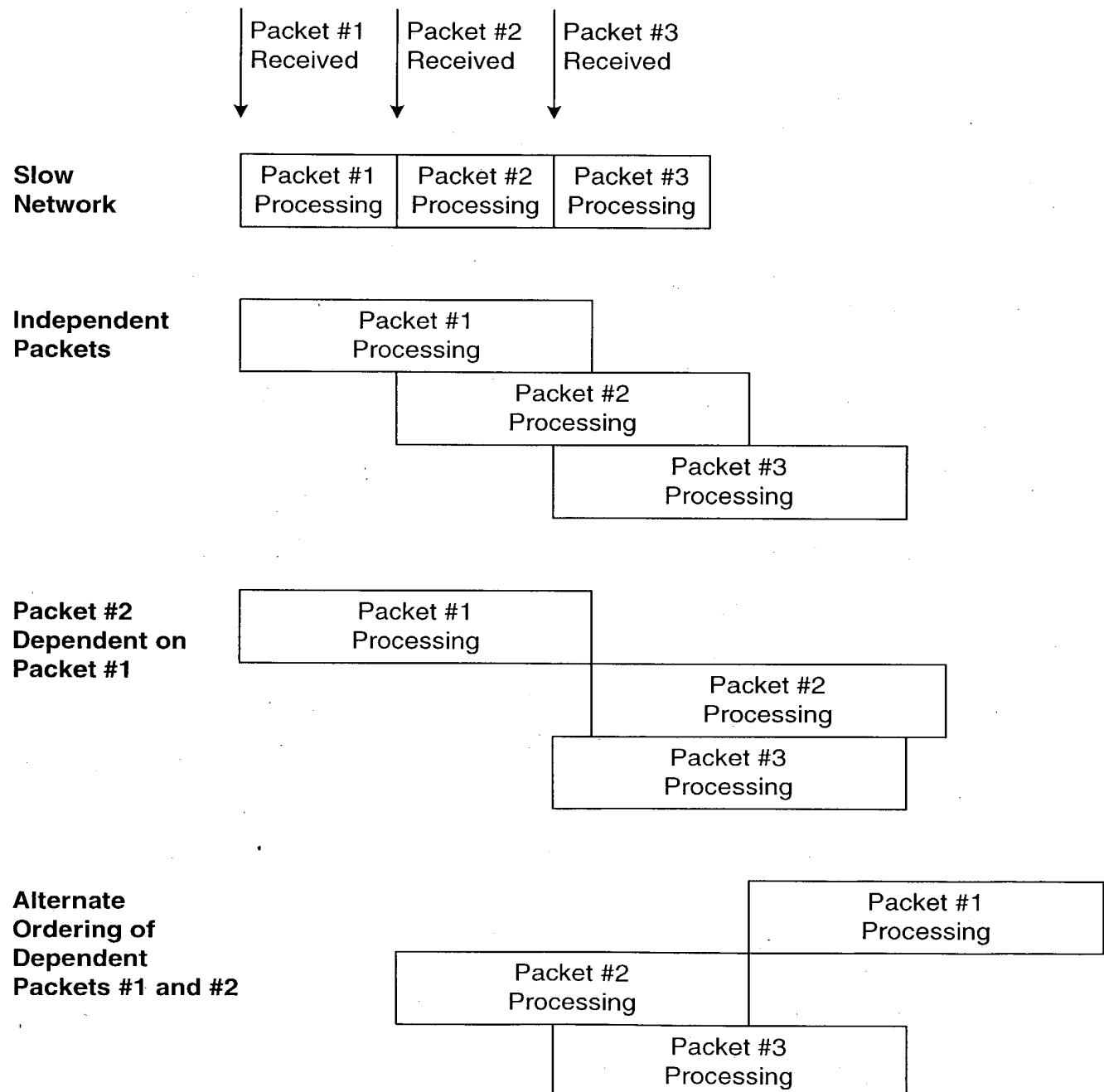


Figure 1
General Packet Processing Examples



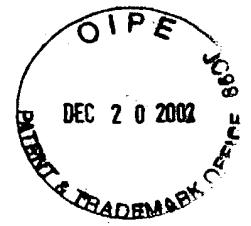
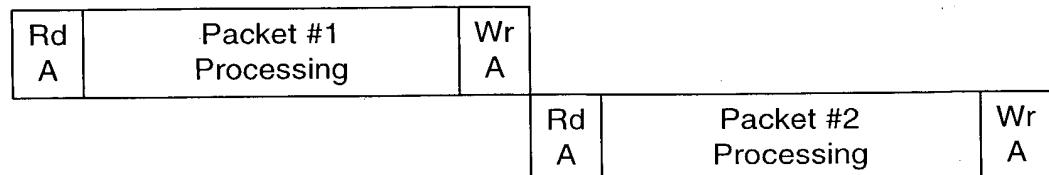
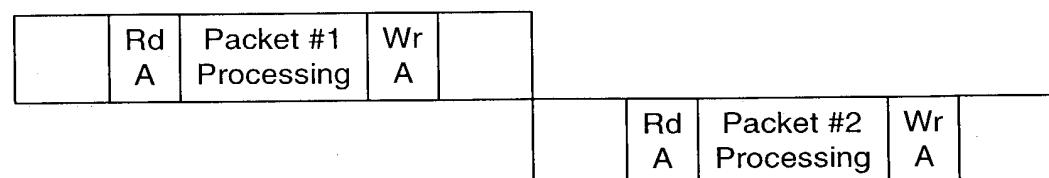


Figure 2
Optimal Overlap of Dependent Packets

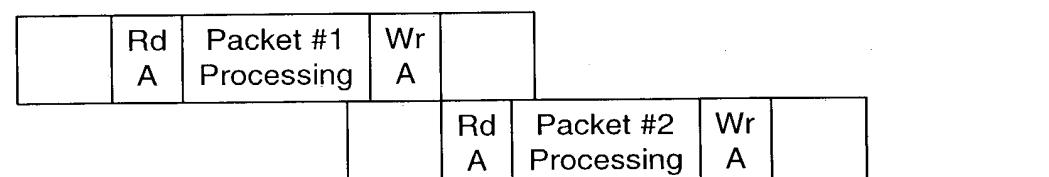
No Overlap Possible



Non-Optimal Overlap



Optimal Overlap



**Alternate
Ordering
Optimal
Overlap**

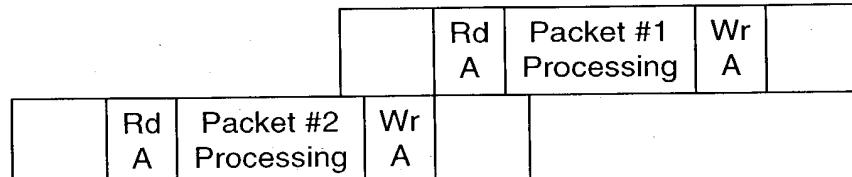


Figure 3
Hardware Enforced Virtual Sequentiality Block Diagram

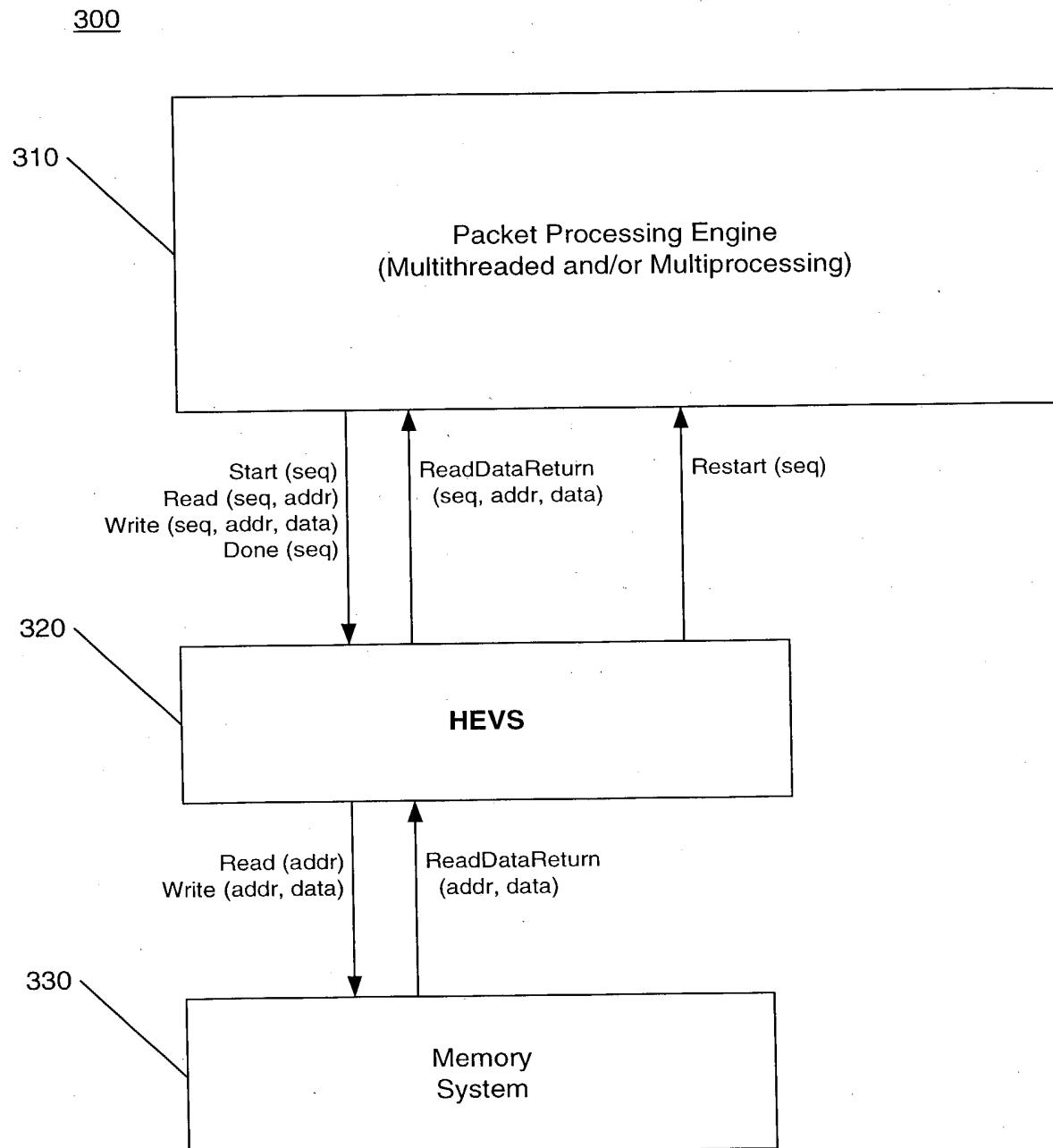




Figure 4
Hardware Enforced Virtual Sequentiality Mechanism

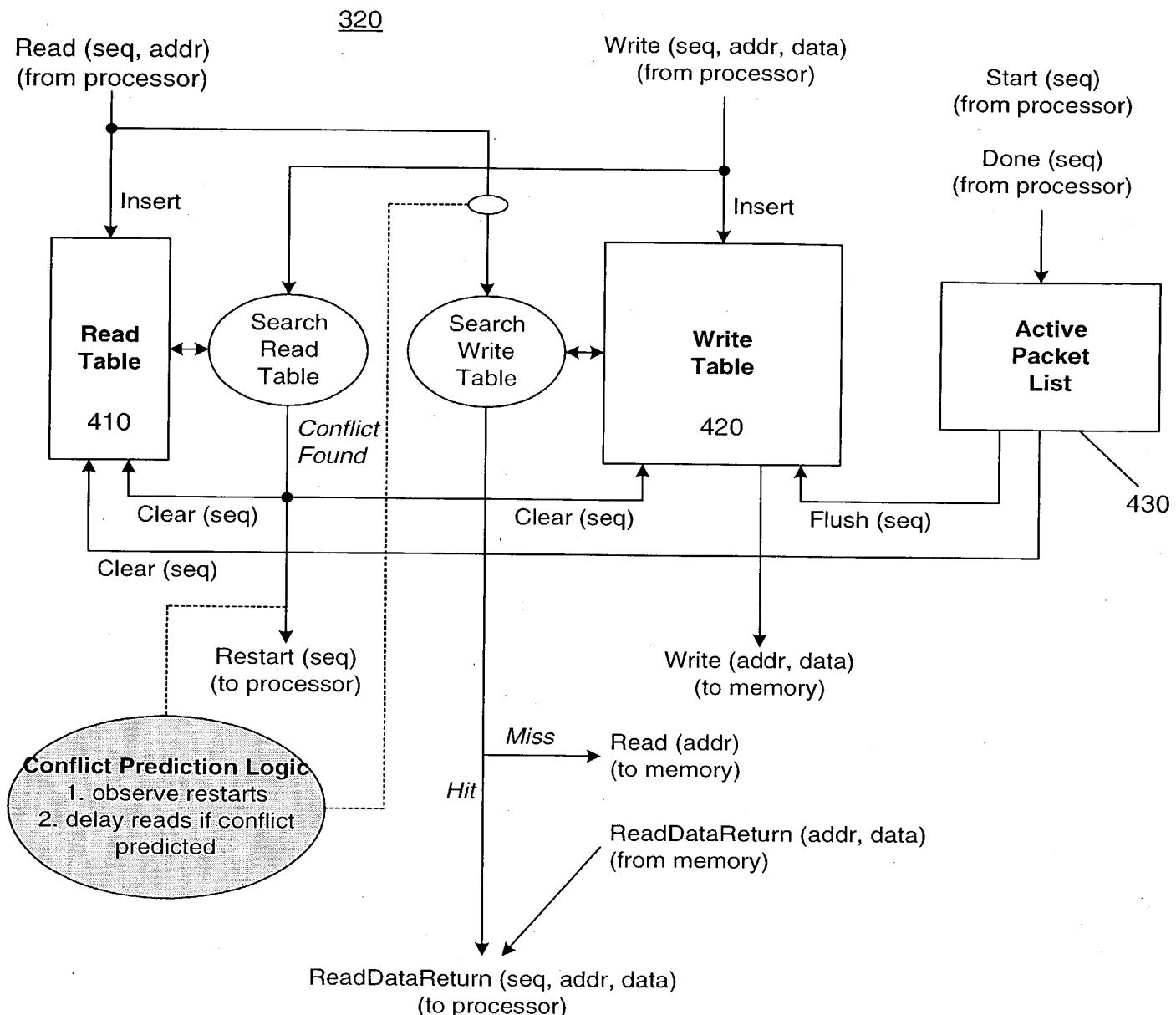




Figure 5
Read Table and Write Table Detail

Read Table

	Seq.	Addr.
p:	1	A
q:	2	B
s:	3	B
t:	2	A

Write Table

	Seq.	Addr.	Data	Depend
r:	2	B	X	3
u:	1	A	X	(null)

410 is connected to the Read Table by a line. 420 is connected to the Write Table by a line.

Time Sequence:

1. Packet #1 reads location A
Entry **p**: created in Read Table
Write Table is searched, no matches found so memory read is performed
2. Packet #2 reads location B
Entry **q**: created in Read Table
Write Table is searched, no matches found so memory read is performed
3. Packet #2 writes location B
Entry **r**: created in Write Table
Read Table is searched, no conflicts found
4. Packet #3 reads location B
Entry **s**: created in Read Table
Write Table is searched, entry **r**: found, data X forwarded and dependency list updated
5. Packet #2 reads location A
Entry **t**: created in Read Table
Write Table is searched, no matches found so memory read is performed
6. Packet #1 writes location A
Entry **u**: created in Write Table
Read Table is searched for newer sequence read, entry **t**: is found
Conflict is signaled to processor, Packet #2 is restarted
Entry **q**: and all other sequence 2 entries are deleted
Deletion of entry **r**: triggers Packet #3 restart signaled

Figure 6
Conflict Detection Processing Examples

